heat increases, and while it is fasting it diminishes; but this diminution has a limit, whereas increased respiration is invariably attended by increased heat. Gaseous matter is exhaled in great abundance from the surface of the body of an insect, and contributes to regulate and equalize its temperature; but the quantity diminishes in proportion to the length of time during which it has been deprived of food. The author maintains that animal heat is not an effect of mere nervous influence, either general or ganglionic; an opinion which he derives from the following considerations: first, that in many insects in which considerable degrees of heat are evolved, and the respiration is energetic, the nervous system is small compared with that of others in which the respiration is less vigorous; and secondly, that if the evolution of animal heat were dependent on the existence of ganglia, the leech ought to generate more heat than the larva of the Lepidoptera, since it has a much greater number of ganglia. Hence he is disposed to draw the general conclusion that animal heat results directly from the changes which take place during respiration; and that the reason why so large a quantity passes off so rapidly from the body of an insect is because it does not become latent, since the circulating fluid, unlike what takes place in the higher animals, is neither completely venous nor completely arterial, but of a character intermediate between both.

Twenty-one tables are annexed exhibiting the records of the experiments referred to in the paper on the respiration, temperature, and circulation of insects.

"Observations on the Dry-rot of Ships, and an effectual method to prevent it pointed out." By James Mease, M.D. Communicated by Charles Konig, Esq., For. Sec. R.S.

The method recommended by the author for preventing the occurrence of the dry-rot in ships is to impregnate the timbers and planks with common salt, as is practised by the ship-builders in Philadelphia. For this purpose all the spaces between the timbers and the outside and inside planks are to be filled with Spanish or Portugal salt, driven down as the filling proceeds. The salt is found to penetrate thoroughly, and completely to saturate the wood, combining with its native sap and preventing fermentation and the consequent evolution of foul air. The principal inconvenience attending this method is the dampness of the ships; an evil for which the author suggests various remedies.

"Experimental Researches on the conducting powers of wires for Electricity; and on the heat developed in metallic and liquid conductors." By the Rev. William Ritchie, L.L.D., Professor of Natural Philosophy in the Royal Institution of Great Britain, and of Natural Philosophy and Astronomy in University College, London.

In a former communication, published in the Philosophical Transactions for 1833, the author endeavoured to show that the quantity of voltaic electricity conducted, or the force of the current, was a function of a greater number of variables than had been previously

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supposed. As the theory which he proposed for estimating the conducting powers of substances has been controverted by M. Lenz, he has been induced to reconsider the subject, and finds reason to be satisfied with the correctness of his former views. He farther finds that with feeble magnetic needles the deflecting forces are not proportional to the force of the current, but approach nearer and nearer to that proportion by increasing the magnetic power of the needles; a result which the author thinks is strictly deducible from the universal law of nature, that the attraction mutually exerted by two bodies is measured by the sum of their masses. He shows that the formula of Ohen, expressive of the conducting powers of wires, and of the resistances which they offer to currents of voltaic electricity, is an approximation to the truth only in the case of feeble currents, and that with the same metal, the conducting powers are not as the lengths of the wires.

The author next inquires into the relation between the heat developed, which he finds to be, in the same wire, as the square of the intensity of the current; and in wires of the same diameter, and conducting equal quantities of electricity, it is inversely as the conducting power, or directly as the resistance which they oppose to the current. The facts he has adduced in this paper seem to be at variance with the generally received theory of caloric, and to be in perfect accordance with the undulatory theory.

He concludes by describing an experiment confirming the views he has elsewhere advanced with regard to the difference between the physical, the physiological, and the chemical effects resulting from the employment of coils formed of wires of different lengths, being dependent on the time required by the conductor for returning to its natural state.

"On the Ipoh or Upas poison used by the Jacoons and other aboriginal tribes of the Malayan Peninsula." By Lieut. T. S. Newbold, Aide-de-Camp to Brigadier-General Wilson, C.B. Communicated by P. M. Roget, M.D., Sec. R.S.

The author gives an account of the process by which the Jacoons, an aboriginal tribe inhabiting the mountains and forests of the Malayan Peninsula, prepare the poison applied to the points of the slender arrows which are propelled from the *Simpitan* or blow-pipe. Three preparations are employed for this purpose, distinguished by the names of *Krohi*, *Tennik* or *Kennik*, and *Mallaye*; the last of these is more powerful than the other two, and is obtained from the roots of the *Tuba*, the *Perachi*, the *Kopah*, and the *Chey*, and from that of the shrub *Mallaye*, whence it derives its name. The *Krohi* poison is prepared from the root and bark of the *Spoh* tree, and the roots of the *Tuba* and *Kopah*, with the addition of red arsenic and the juice of limes; and the *Tennik* from the same ingredients, omitting the Kopah root. A few experiments are related, made by the author with a view to ascertain the effects of the poisoned arrows on living animals, from which it appears that the train of symptoms commence in a few minutes after the infliction of the wound, and